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Brazil

Biofuels Annual

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Report Highlights:

Total Brazilian ethanol production for 2015 is projected at 26.9 billion liters, a 5 percent increase compared to 2014. Ethanol exports are forecast at 1.8 billion liters, up 200 million from current year. The biodiesel industry remains regulated by the government which recently increased biodiesel blend requirements to 6 percent effective July 1, 2014 and 7 percent effective November 1, 2014. As a consequence, biodiesel production for 2015 is projected at 4.4 billion liters, up 900 million liters from 2014.

1. Executive Summary

The present report includes the following sections: (1) Executive Summary; (2) Policy and Programs; (3) Ethanol; (4) Biodiesel; (5) Advanced Biofuels; and, (6) Notes on Statistical Data.

1.1. Brazil's Political Division

The map below shows Brazil's political division in regions and states.



2. Policy and Programs

2.1. Government Support Programs for Ethanol

2.1.1. Regional Producer Subsidy

The president of the Northeastern Sugarcane Producers Union (UNIDA) reports that Brazilian government should

According to Bill # 12.999/14, the amount of R\$ 170 million will be paid to sugarcane growers from the Northeast affected by one of the most severe drought in the past decades. Approximately 23,000 growers will be eligible for a Regional Producer Subsidy. The release of the funds depends on President Dilma Rousseff's signing a provisional measure ("Medida Provisoria") which has not occurred yet.

2.1.2. Ethanol use mandate

As of May 1, 2013, the ethanol content blended to gasoline is set at 25 percent, according to Resolution # 1 from February 2013, of the Sugar and Ethanol Interministerial Council (CIMA). Earlier in 2014, the Sugar and Alcohol Millers Association of São Paulo State (UNICA) requested the increase of the blend to 27.5 percent. GOB has conducted technical studies led by Petrobras, the Brazilian oil company, and should announce results in late September. However, if recommended by the studies, it is unlikely that the new blend would become effective in 2014.

The National Association of Motor Vehicle Manufacturers (ANFAVEA) reports that further increases in the blend would hurt the performance of engines designed to be powered exclusively by gasoline.

2.1.3. Tax incentives for ethanol

A. Tax incentives for ethanol-flex fuel vehicles

The table below shows the value of IPI (Tax on Industrialized Products), PIS/COFINS (Contribution to the Social Integration Program/Contribution for Financing Social Security) and ICMS (State tax for circulation of goods and services) for different categories of vehicles as reported by the National Association of Motor Vehicle Manufacturers (ANFAVEA). Note that taxes on flex cars are lower than taxes on gasoline powered cars, especially with regard to the IPI. From May 2012 through December 2013 temporary tax reductions were authorized by GOB.

Taxes Applied to Ethanol, Flex-Fuel and Gasoline Vehicles (Percentage)						
Year	Taxes	1000 cc	1001-2000 cc		Over 2000 cc	
		Gas 1/ /Eth/Flex	Gas 1/	Eth/Flex	Gas 1/	Eth/Flex
2004 to 2007	IPI	7	13	11	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1	30.4	29.2	36.4	33.1
2008	IPI	0	6.5	5.5	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	22.2	26.4	25.8	36.4	33.1
2009	IPI	5/3*	11	7.5	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	25.7/24.4 *	29.2	27.1	36.4	33.1
January thru March 2010	IPI	7/3*	13	7.8	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1/24.4 *	30	27.1	36.4	33.1
As of April 2010 and 2011	IPI	7	13	11	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1	30.4	29.2	36.4	33.1
2012 and 2013	IPI	7	13	11	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1	30.4	29.2	36.4	33.1

Source: National Association of Motor Vehicle Manufacturers (ANFAVEA)

1/ Gas = Gasoline. *The tax of 3% refers to flex fuel cars MSRP = Manufacturer Suggested Retail Price. The aggregation of the individual taxes does not necessarily add up to the percentage of the Average Retail Price (fourth row) because each individual tax applies to different steps of the production chain and not to the final retail price. During 2013, the Brazilian government offered temporary tax breaks to some categories.

B. Tax incentives for ethanol fuel

The CIDE (Contribution for Intervention in Economic Domain) value remains at zero for both ethanol and gasoline.

PIS/COFINS (Contribution to the Social Integration Program/Contribution for Financing Social Security) federal taxes are charged together. For gasoline, PIS/COFINS are set at R\$0.2616/liter. In May 2013, through Provisional Measure # 613, the GOB created a PIS/CONFINS presumed credit for the ethanol industry which in practice dropped to zero the R\$0.12/liter (R\$0.048/liter on producers and R\$0.072/liter on distributors) that applies to the product. On December 2013, GOB through Provisional Measure # 634, also extended the zero tax applied to PIS/COFINS to all imported ethanol, including ethanol for fuels.

No changes have been made to the ICMS - State tax for circulation of goods and services. There are different tax regimes depending on the Brazilian state. ICMS charged on ethanol varies from 12 to 27 percent, with most states charging 25 percent. ICMS for gasoline varies from 25 to 31 percent.

2.1.4. Credit Lines

In March 2014, the Brazilian Government announced the continuity of the Prorenewa for 2014, a credit line of R\$3 billion (approximately US\$ 1.25 billion) available to finance the renewal and/or expansion of sugarcane fields. The interest rate is set at the "long term interest rate" (TJLP) plus 2.7 percent per year. BNDES set a limit of R\$ 6,500 to finance each hectare planted to sugarcane and the total limit of R\$ 150 million per financial group.

BNDES also announced the continuity of the credit line (R\$ 2 billion) to support ethanol storage (PASS program) for 2014. The interest rate is set at the "long term interest rate" (TJLP) plus 2.7 percent per year. The reference price is set at R\$ 1.50/liter of anhydrous ethanol and R\$ 1.35 for hydrous ethanol.

2.1.5. Ethanol Import Tariff

No changes have been made to the ethanol import tariff which remains zero up to December 31, 2015, according to Resolution #94 of the Ministry of Development, Industry and Commerce (MDIC)/Chamber of Foreign Trade (CAMEX).

2.1.6. Ethanol Supply Contracts

No changes have been made to the ethanol supply contracts set by the National Agency of Petroleum, Natural Gas and Biofuels (ANP). Fuel distributors are required to adopt a **yearly supply contract** to meet purchasing targets. The target is equivalent to 90 percent of total gasoline C (gasoline blended with ethanol) sales from the previous year and will be enforced in the beginning of every crop year (April 1). If distributors choose not to set a supply contract and buy the product on a monthly basis (**direct purchase**), they are required to have stocks on the last day of the month equivalent to the volume of gasoline C marketed in the subsequent month of the previous year.

2.2. Government Support Programs for Biodiesel

2.2.1. Biodiesel use mandate

The biodiesel use mandate was set at 5 percent (B5) up to July 31st 2014. Provisional Measure 647 from May 29th, 2014, set the new biodiesel blends to diesel at 6 percent (B6) as of July 1st, 2014, and 7 percent (B7) as of November 1st, 2014. The increase of the biodiesel blend has been a longstanding request from industry given that industrial capacity is more than 2 times actual production goals.

2.2.3. Biodiesel Import Tariff

According to the Secretariat of Foreign Trade, the import tariff applied to biodiesel (NCM 3826.00.00) is set at 14 percent.

2.3. Transport Fuel Consumption

Transport fuel projections assume a 2.5 percent growth rate in the Brazilian Growth Domestic Product (GDP). Sales by fuel distributors as informed by ANP for 2013 and January-May 2014 are used as baseline for projections. No information is available for diesel use breakdown.

Fuel Use Projections (Million Liters)									
Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023
Gasoline Total	44,650	45,766	46,910	48,083	49,285	50,517	51,780	53,075	54,402
Diesel Total	61,450	62,986	64,561	66,175	67,829	69,525	71,263	73,045	74,871
On-road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Agriculture	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Construction/mining	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shipping/rail	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Industry	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Heating	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet Fuel Total	7,620	7,811	8,006	8,206	8,411	8,621	8,837	9,058	9,284
Total Fuel Markets	113,720	116,563	119,477	122,464	125,526	128,664	131,880	135,177	138,557

3. Ethanol

Ethanol is an alcohol made by fermenting sugar components of plant materials such as corn and wheat starch, sugarcane, sugarbeet, sorghum, and cassava.

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)								
Calendar Year	2008	2009	2010	2011	2012	2013	2014	2015
Beginning Stocks	4829	5783	4048	5916	6891	7094	8127	6982
Fuel Begin Stocks	4468	5422	3683	5549	6488	6690	7723	6538
Production - Total	27140	26105	27965	22893	23509	27642	25605	26885
Conventional	27140	26105	27965	22893	23509	27642	25585	26864
Advanced	0	0	0	0	0	0	20	162
Fuel Production	23582	22201	24516	20212	20739	24377	22555	23826
Imports	0	4	76	1136	554	131	400	440
Fuel Imports	0	0	74	1100	553	131	360	400
Exports	5124	3296	1906	1964	3055	2915	1600	1800
Fuel Exports	3044	1118	562	1083	2500	1950	900	1000
Consumption	21062	24548	24267	21090	20805	23825	25550	26600
Fuel Consumption	19584	22823	22162	19290	18590	21525	23200	24200
Ending Stocks	5783	4048	5916	6891	7094	8127	6982	5907
Fuel Ending Stocks	5422	3683	5549	6488	6690	7723	6538	5564
Production Capacity - Conventional								
Number of Refineries	407	426	430	418	408	399	390	390
Nameplate Capacity	38300	35600	41360	42800	41600	40700	39700	39,700
Capacity Use (%)	62%	62%	59%	47%	50%	60%	57%	68%
Feedstock Use - Conventional - Ethanol (1,000 MT)								
Sugarcane	335188	346070	342254	293807	297859	338891	313917	334790
Feedstock Use - Advanced Ethanol (1,000 MT) 1/								
Sugarcane	0	0	0	0	0	0	167	1350
Market Penetration (Liters - specify unit)								
Fuel Ethanol	19,584	22,823	22,162	19,290	18,590	21,525	23,200	24,200
Gasoline	25,175	25,409	29,844	35,491	39,698	41,365	43,560	44,650
Blend Rate (%)	77.8%	89.8%	74.3%	54.4%	46.8%	52.0%	53.3%	54.2%
1/ Industrial Yield estimate for advanced ethanol production is preliminary.								

3.1. Brazilian Bioethanol Production, Supply and Demand (PS&D) Tables

Sugarcane is the source of feedstock for ethanol production in Brazil. The tables below show the Brazilian ethanol supply and demand (PS&D) spreadsheets for "All Uses" and "Fuel Use Only" for calendar years 2010 through 2015. Several remarks must be made regarding the aforementioned tables - see Notes on Statistical Data - Ethanol (Section 6.1.).

ATO/Sao Paulo historically reported all figures related to the sugar-ethanol industry in marketing years (MY) and, therefore, made all necessary adjustments to convert from marketing to calendar years. Brazilian official marketing year for sugarcane, sugar and ethanol production, as determined by the Brazilian government, remains May-April for the center-south producing states, although sugarcane crushing has started as early as late March in past years. Official marketing year for the North-Northeast is September-August.

Note: no Brazilian government entity or trade source maintains production figures on use "for fuel" or "other uses". All ethanol production figures are solely reported as hydrous and anhydrous volumes. According to post contacts, ethanol plants produce different specifications of hydrous and/or anhydrous, but make no distinction between fuel/other uses. The use for fuels/other uses (industrial, refined or neutral) are determined at the end user level.

Total Conventional Bioethanol Production, Supply and Demand All Uses (million liters)						
CY	2010	2011	2012	2013	2014	2015
Begin Stocks	4,048	5,916	6,891	7,094	8,127	6,982
Production	27,965	22,893	23,509	27,642	25,605	26,885
Conventional	27,965	22,893	23,509	27,642	25,585	26,864
Advanced Only	0	0	0	0	20	162
Imports	76	1,136	554	131	400	440
Fuel	74	1,100	553	131	360	400
Other Uses	1	36	1	0	40	40
Total Supply	32,089	29,945	30,954	34,867	34,132	34,307
Exports	1,906	1,964	3,055	2,915	1,600	1,800
Fuel	562	1,083	2,500	1,950	900	1,000
Other Uses	1,344	881	555	965	700	800
Consumption	24,267	21,090	20,805	23,825	25,550	26,600
Fuel	22,162	19,290	18,590	21,525	23,200	24,200
Other Uses	2,105	1,800	2,215	2,300	2,350	2,400
Ending Stocks	5,916	6,891	7,094	8,127	6,982	5,907
Production Capacity (Conventional)						
No. of Biorefineries	430	418	408	399	390	390
Capacity	41,360	42,800	41,600	40,700	39,700	39,700
Capacity Use (%)	67.6	53.5	56.5	67.9	64.4	67.7
Production Capacity (Advanced)						
No. of Biorefineries	0	0	0	0	1	3
Capacity	0	0	0	0	82	162
Capacity Use (%)	0	0	0	0	24.4	100.0
Feedstock Use - Conventional (1,000 MT)						
Sugarcane	342254	293807	297859	338891	313917	334790
Fuel	300048	259399	262763	298862	276524	296695
Other Uses	42,207	34,408	35,096	40,029	37,393	38,095
Feedstock Use - Advanced (1,000 MT)						
Sugarcane	0	0	0	0	167	1,350

Source: Prepared by ATO/Sao Paulo based on MAPA, SECEX, Datagro, ANP, UNICA and industry sources. Numbers for 2014 and 2015 are projections.

3.2. Production

A. Production Estimates

Post projections are based on industry sources. To be in accordance with the actual feedstock production cycle, the following narrative describes sugarcane and ethanol production in marketing years (MY). Note that all necessary adjustments were made to convert production figures from MY to calendar years.

The Agricultural Trade Office (ATO)/Sao Paulo estimates the MY 2014/15 Brazilian sugarcane production at 629 million metric tons (mmt), down 21 mmt from MY 2013/14. The center-south (CS) region is expected to harvest 575 mmt of sugarcane, a 4 percent decrease from the previous season, due to projected lower agricultural yields as a result of irregular weather conditions (drought) and below average replanting of sugarcane. Post projects the North-Northeastern (NNE) production for MY 2014/15 at 54 mmt, similar to MY 2013/14.

Total sucrose (total reducing sugar, TRS) content destined for sugar and ethanol production during MY 2014/15 is estimated at 46.5 and 53.5 percent, respectively. The revised sugar-ethanol mix for MY 2013/14 is 45.5 and 54.5 percent. Sugar-ethanol mills are expected to divert more sugarcane to sugar in the upcoming crop. The industry is expected to comply with the sugar export contracts and guarantee enough anhydrous ethanol production to blend with gasoline. Hydrated ethanol production will be the last option pursued by millers due to lack of profitability.

It is early to predict MY 2015/16 production. More accurate numbers should be available in the first quarter of 2015 with the development of feedstock from new sugarcane plantings and recovery from current harvested areas; e.g., sugarcane from second, third, fourth, fifth and older cuts; as well as projections for sugar and ethanol demand in both the domestic and international markets. Current production forecast is based on the assumption that regular weather conditions will prevail throughout the sugarcane production cycle.

Post projects sugarcane production for MY 2015/16 at 660 mmt, a 5 percent increase compared to the current crop, assuming historical stock renewal rates and agricultural yields.

ATO projects 2015 total ethanol production at 26.9 billion liters, up 5 percent from 2014 (25.6 billion liters). Ethanol for fuel production is forecast at 23.8 billion liters for 2015, a 1.3 billion liter increase over 2014.

B. Industrial Capacity

ATO/Sao Paulo has adjusted total industrial capacity for sugarcane crushing to 3.35 million metric tons/day, down 2 percent from previous crop, to reflect the reduction in the number of ethanol and sugar-ethanol plants in operation.

Ethanol production capacity for 2015 is forecast at 39.7 billion liters, equivalent to revised figure for 2014. This figure reflects the lower number of ethanol and sugar-ethanol plants in operation.

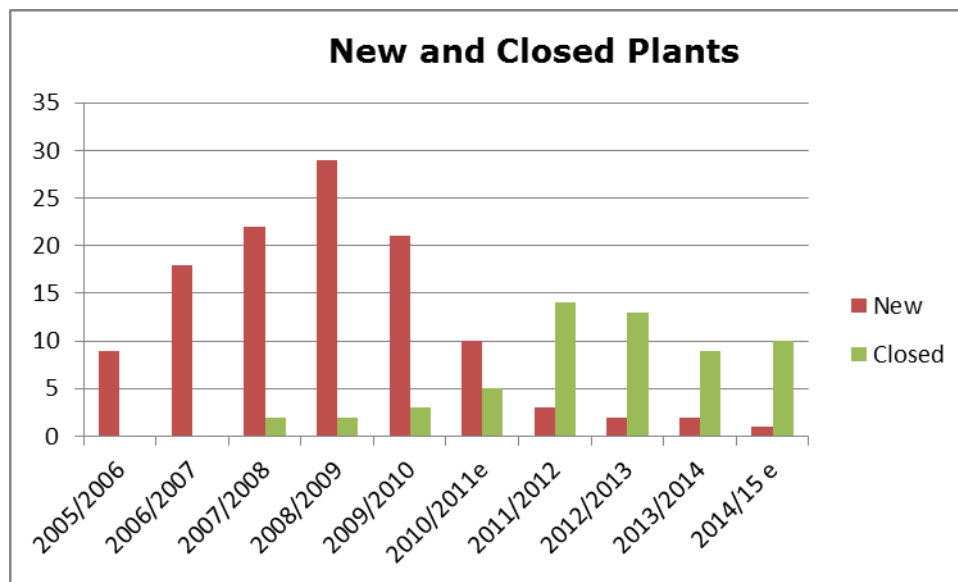
Ethanol production capacity estimated in this report was based on production figures reported by UNICA. Post took the highest ethanol production figure in a given 15-day

period, and extrapolated to the entire Center-south crushing season. A similar procedure was followed for Northeast production based on MAPA reports. Sugarcane crushed for ethanol production was calculated based on the actual production breakdown for sugar/ethanol as described in previous GAIN reports. On average, one metric ton of sugarcane produces about 80.5 liters of ethanol.

C. New Investments/Shut Down of Ethanol Plants

Total number of sugar-ethanol mills in 2014 is estimated at 390 units, whereas total operating units for 2013 was 399. Investments in new greenfield projects remain scarce. UNICA estimates only one new plant for 2014/15. Concurrently, several units have been closed in the past couple of years mainly due to financial constraints. UNICA projects that 10 units should close operations this season. Note that some of the units have been acquired by larger and financially healthy groups.

The graphs below show revised data for the evolution of new and closed ethanol and sugar-ethanol plants as of MY 2005/06 as reported by UNICA.



D. Sugarcane and Ethanol Prices received by Producers

Sugarcane prices received by third party suppliers for major producing states are based on a formula that takes into account prices for sugar and ethanol prices both in the domestic and international markets. The State of Sao Paulo Sugarcane, Sugar and Ethanol Growers Council (CONSECANA) was the first to develop this formula for the state of Sao Paulo, the major producing state comprising roughly 60 percent of the Brazilian production.

The average state of Sao Paulo Sugarcane, Sugar and Ethanol Growers Council (CONSECANA) price for the current crop (MY 2014/15) for the April-May 2014 period is R\$0.4697 kg of TRS, or approximately R\$58.46 ton of sugarcane. CONSECANA reports that the average sugarcane price for the state of Sao Paulo for the 2013/14 crop is R\$0.4572 per kg of TRS, or R\$60.96 per ton of sugarcane.

The Ethanol Indexes released by the University of Sao Paulo's College of Agriculture "Luiz de Queiroz" (ESALQ) follow. The Indexes track anhydrous and hydrous ethanol for fuel prices received by producers in the domestic spot market.

Price for Fuel Anhydrous Ethanol - State of São Paulo (R\$/000 liters).					
Period	2010	2011	2012	2013	2014
January	1285.40	1233.20	1270.30	1302.50	1456.10
February	1297.60	1293.10	1184.60	1352.70	1520.50
March	974.60	1596.60	1278.80	1374.50	1610.20
April	908.40	2375.00	1259.70	1394.80	1522.00
May	839.20	1380.70	1294.30	1329.10	1366.40
June	827.30	1244.60	1234.00	1285.20	1359.20
July	924.20	1298.90	1232.50	1271.20	1352.50
August	961.90	1352.80	1198.70	1227.30	
September	1040.20	1384.20	1198.90	1277.10	
October	1173.20	1378.50	1140.00	1315.40	
November	1185.20	1377.30	1234.90	1342.80	
December	1201.80	1359.20	1287.20	1440.00	

Source: USP/ESALQ/CEPEA. 1/ July 2014 price refers to June 30 thru July 04.

Price for Fuel Hydrated Ethanol - State of São Paulo (R\$/000 liters).					
Period	2010	2011	2012	2013	2014
January	1171.20	1109.40	1159.00	1144.60	1284.80
February	1095.80	1176.10	1119.80	1232.00	1368.60
March	825.20	1421.90	1204.40	1226.40	1419.50
April	799.70	1387.50	1191.40	1244.30	1338.50
May	724.30	1005.90	1140.10	1110.20	1200.90
June	720.30	1113.70	1082.80	1140.20	1214.90
July	797.90	1136.80	1059.90	1114.50	1237.80
August	835.70	1193.00	1041.70	1088.60	
September	896.20	1204.60	1062.40	1148.50	
October	977.70	1229.70	1010.60	1164.00	
November	1001.00	1277.00	1095.90	1204.70	
December	1075.10	1250.10	1132.50	1281.10	

Source: USP/ESALQ/CEPEA. 1/ July 2014 price refers to June 30 thru July 04.

3.3. Consumption

Brazil is an important user of ethanol for fuel consumption. Total domestic demand for ethanol for calendar year 2015 is forecast at 26.6 billion liters, a 4 percent increase relatively to 2014, based on likely higher supply. Total ethanol consumption for use as fuel is estimated at 24.2 billion liters for 2015. Ethanol consumption for other uses is projected at 2.4 billion liters, up 50,000 liters compared to 2014 due to steady demand from the chemical industry.

The size of the Brazilian light vehicle fleet was estimated at over 33 million units in 2013 and pure hydrous ethanol and flex fuel powered vehicles together represent approximately more than 55 percent of the total fleet. Industry projects that the share of flex fuel vehicles is likely to reach over 80 percent by 2020.

The table below shows the licensing of flex fuel vehicles (FFV) and hydrous ethanol powered cars, as reported by the Brazilian Association of Vehicle Manufacturers (ANFAVEA). Sales of FFV currently represent over 95 percent of total monthly vehicle sales.

Licensing of Ethanol Powered Vehicles (pure ethanol & flex fuel units)						
2008	2009	2010	2011	2012	2013	2014 1/
2,356,942	2,711,267	2,876,173	2,848,071	3,162,824	3,169,111	1,394,199
Source: National Association of Vehicle Manufacturers (ANFAVEA) 1/ January-June						

The steady sales of flex-fuel vehicles do not solely guarantee a higher demand for ethanol given that consumers' decisions are driven by the ratio between ethanol and gasoline prices. The 70 percent ratio between ethanol and gasoline prices is the rule of thumb in determining whether flex car owners will choose to fill up with ethanol (price ratio below 70 percent) or gasoline (price ratio above 70 percent). Note that the crushing period in the center-south started in April/May, but gasoline prices still remained competitive in June 2013 in several Brazilian states.

Gasoline and Ethanol Prices in Selected States (average price, R\$/liter)									
		Gasoline				Ethanol			
		2011	2012	2013	2014	2011	2012	2013	2014
Sao Paulo State	Jan	2.487	2.649	2.644	2.835	1.733	1.888	1.829	1.909
	Feb	2.490	2.641	2.767	2.837	1.765	1.818	1.875	1.946
	Jun	2.665	2.636	2.726	2.868	1.704	1.805	1.787	1.902
	Aug	2.663	2.261	2.705		1.814	1.747	1.741	
Sao Paulo City	Jan	2.482	2.647	2.628	2.803	1.733	1.874	1.818	1.903
	Feb	2.486	2.630	2.739	2.800	1.766	1.801	1.869	1.935
	Jun	2.680	2.630	2.699	2.835	1.716	1.786	1.751	1.869
	Aug	2.673	2.605	2.674		1.820	1.722	1.718	
Minas Gerais	Jan	2.537	2.824	2.824	2.976	1.902	2.208	2.095	2.134
	Feb	2.584	2.817	2.923	2.963	1.956	2.166	2.125	2.149
	Jun	2.823	2.806	2.903	2.952	2.075	2.142	2.105	2.210
	Aug	2.817	2.801	2.875		2.126	2.110	2.035	
Belo Horizonte (MG Capital)	Jan	2.499	2.761	2.740	2.859	1.886	2.172	2.083	2.098
	Feb	2.547	2.746	2.824	2.847	1.938	2.128	2.106	2.110
	Jun	2.778	2.741	2.782	2.851	2.087	2.127	2.065	2.155
	Aug	2.781	2.718	2.732		2.113	2.094	1.947	
Rio Janeiro State	Jan	2.654	2.850	2.898	3.082	2.022	2.266	2.243	2.352
	Feb	2.663	2.846	3.002	3.085	2.053	2.257	2.268	2.378
	Jun	2.892	2.854	3.005	3.132	2.200	2.256	2.303	2.468
	Aug	2.854	2.849	2.994		2.212	2.206	2.257	
Rio Janeiro Capital	Jan	2.651	2.818	2.866	3.052	2.025	2.257	2.231	2.340
	Feb	2.661	2.810	2.967	3.056	2.057	2.236	2.251	2.372
	Jun	2.865	2.821	2.974	3.109	2.165	2.253	2.280	2.451
	Aug	2.824	2.813	2.959		2.191	2.185	2.231	
Porto Alegre (RS Capital)	Jan	2.534	2.738	2.695	2.897	2.103	2.372	2.316	2.387
	Feb	2.552	2.689	2.847	2.882	2.157	2.348	2.336	2.396
	Jun	2.722	2.657	2.751	2.884	2.180	2.390	2.396	2.384
	Aug	2.632	2.663	2.760		2.237	2.360	2.387	
Goiania (GO Capital)	Jan	2.667	2.831	2.743	3.136	1.822	1.959	1.937	2.225
	Feb	2.697	2.782	2.836	3.111	1.891	1.899	1.951	2.175
	Jun	2.830	2.672	2.794	3.085	1.782	1.856	1.849	2.100
	Aug	2.838	2.638	2.784		1.837	1.773	1.811	
Fortaleza (CE Capital)	Jan	2.644	2.551	2.675	2.891	1.871	2.076	2.220	2.335
	Feb	2.647	2.660	2.850	2.879	1.944	2.077	2.280	2.342
	Jun	2.688	2.564	2.856	2.952	2.029	2.163	2.337	2.471
	Aug	2.661	2.685	2.780		2.161	2.162	2.332	

Source: Petroleum, Natural Gas and Biofuels National Agency (ANP).

Ratio Ethanol/Gasoline Prices					
		2011	2012	2013	2014
Sao Paulo State	Jan	70%	71%	69%	67%
	Feb	71%	69%	68%	69%
	Jun	64%	68%	66%	66%
	Aug	68%	77%	64%	
Sao Paulo City	Jan	70%	71%	69%	68%
	Feb	71%	68%	68%	69%
	Jun	64%	68%	65%	66%
	Aug	68%	66%	64%	
Minas Gerais	Jan	75%	78%	74%	72%
	Feb	76%	77%	73%	73%
	Jun	74%	76%	73%	75%
	Aug	75%	75%	71%	
Belo Horizonte (MG Capital)	Jan	75%	79%	76%	73%
	Feb	76%	77%	75%	74%
	Jun	75%	78%	74%	76%
	Aug	76%	77%	71%	
Rio Janeiro State	Jan	76%	80%	77%	76%
	Feb	77%	79%	76%	77%
	Jun	76%	79%	77%	79%
	Aug	78%	77%	75%	
Rio Janeiro Capital	Jan	76%	80%	78%	77%
	Feb	77%	80%	76%	78%
	Jun	76%	80%	77%	79%
	Aug	78%	78%	75%	
Porto Alegre (RS Capital)	Jan	83%	87%	86%	82%
	Feb	85%	87%	82%	83%
	Jun	80%	90%	87%	83%
	Aug	85%	89%	86%	
Goiania (GO Capital)	Jan	68%	69%	71%	71%
	Feb	70%	68%	69%	70%
	Jun	63%	69%	66%	68%
	Aug	65%	67%	65%	
Fortaleza (CE Capital)	Jan	71%	81%	83%	81%
	Feb	73%	78%	80%	81%
	Jun	75%	84%	82%	84%
	Aug	81%	81%	84%	
Source: Petroleum, Natural Gas and Biofuels National Agency (ANP).					
Gray Area means gasoline prices more attractive than ethanol					

Fuel consumption in Brazil, as reported by the Petroleum, Natural Gas and Biofuels National Agency (ANP), follows. The figures take into account the product sales by distributors and do not include illegal sales, which were common in the past for hydrous ethanol due to tax differentiation between both types of ethanol. As a result of measures taken by ANP to avoid tax evasion, figures as of 2008 better reflect total hydrous ethanol consumption.

Brazilian Fuel Consumption Matrix (000 m3)						
	2009	2010	2011	2012	2013	2014 1/
Diesel *	44,298	49,239	52,264	55,900	58,492	23,963
Gasoline C**	25,409	29,844	35,491	39,698	41,365	18,062
Hydrated Ethanol	16,471	15,074	10,899	9,850	11,755	5,084
Source: ANP. * Diesel includes Bx Biodiesel as of 2008. ** Gasoline C includes 20-25 % of anhydrous ethanol. 1/ 2014 refers to January-February.						

3.4. Trade

A. Exports

Brazilian total ethanol exports for 2015 are forecast at 1.8 billion liters, up 200 million liters from 2014. Total 2014 fuel ethanol exports are projected at 900 million liters. The tables below show ethanol exports (NCM 2207.10 through 2207.20.19) for 2013 and 2014 (January-June), as reported by the Brazilian Secretariat of Foreign Trade (SECEX).

Brazilian Ethanol Exports (NCM 2207.10, 2207.20.11 & 2207.20.19, 000 Liters, MT, US\$ 1,000 FOB)						
Country	CY 2013			CY 2014 1/		
	Volume	Weight	Value	Volume	Quantity	Value
United States	1,656,411	1,309,294	1,094,013	473,036	373,800	327,712
South Korea	359,823	290,792	216,695	176,210	142,395	106,192
Netherlands	142,261	114,692	85,367	5,597	4,525	3,283
Japan	124,137	98,808	80,912	50,047	39,925	34,486
Jamaica	112,419	90,859	67,119	0	0	0
Nigeria	92,377	74,652	55,001	23,609	19,080	14,381
Philippines	69,362	54,780	45,282	0	0	0
United Arab Emirates	66,439	52,455	43,902	0	0	0
Saudi Arabia	57,440	46,243	35,709	0	0	0
El Salvador	44,451	35,931	27,471	0	0	0
Others	191,440	153,901	117,468	54,747	44,180	35,528
Total	2,916,561	2,322,408	1,868,939	783,245	623,905	521,582
Source : Brazilian Foreign Trade Secretariat (SECEX)						
Note : Numbers may not add due to rounding 1/Jan-June.						

B. Imports

Brazilian total ethanol imports for 2015 are projected 440 million liters, almost exclusively for fuel use. The tables below show ethanol imports (NCM 2207.10 through 2207.20.19) for 2013 and 2014 (January-June), as reported by the Brazilian Secretariat of Foreign Trade (SECEX).

Brazilian Ethanol Imports (NCM 2207.10, 2207.20.11 & 2207.20.19, 000 Liters, MT US\$ 1,000 FOB)						
	CY 2013			CY 2014 1/		
Country	Volume	Weight	Value	Volume	Weight	Value
United States	131,203	103,499	89,784	307,191	242,461	159,187
Jamaica	335	283	1,120	49	41	183
Germany	50	37	389	19	15	174
Poland	72	60	108	72	60	109
Mexico	14	12	93	15	13	94
France	11	9	87	4	5	31
Barbados	23	20	31	0	0	0
Spain	3	2	8	3	2	10
Switzerland	0	0	6	0	0	6
United Kingdom	0	0	1	12,998	10,246	7,342
Others	0	0	1	10,977	8,694	6,336
Total	131,712	103,922	91,629	331,328	261,538	173,474
Source : Brazilian Foreign Trade Secretariat (SECEX)						
Note : Numbers may not add due to rounding 1/Jan - June						

3.5. Ending Stocks

Beginning stocks for ethanol for "All Uses" table is based on information from MAPA and reflect all stocks at ethanol plants on January 1, 2006. Beginning stocks for ethanol "For Fuel Only" table is estimated based on historical average use of bioethanol for fuel/other uses.

On average, ethanol for fuel has represented 87 percent of total ethanol disappearance (consumption and exports), therefore Post assumed this percentage to calculate the theoretical beginning stocks for fuel in January 1, 2006. All other stock figures were calculated based on the difference between total supply and disappearance.

ATO/Sao Paulo projects ending stocks for fuel ethanol at 5.56 billion liters for 2015, down 1 billion liters from 2014. Ending stocks measured on December 31 of each year do not actually reflect the supply and demand balance. In general, ethanol plants in the center-south are nearing the end of the crushing season, while ethanol plants in the northeast are fully operating. As a consequence, stock levels are expected to be high.

Stock figures measured on April 1, after subtracting the disappearance (consumption and exports) during the first quarter of the year, will likely show a more realistic picture about product availability in the beginning of the new crop season (April).

3.7. Market for Ethanol Used as Other Industrial Chemicals

Ethanol for "other uses" is used by companies for chemicals, cosmetics, etc. It is common that "ethanol refineries" purchase hydrous/anhydrous ethanol to reprocess and resell to smaller businesses. During the reprocessing, these plants change the original specifications of the product to meet customer requirements.

Ethanol Used as Other Industrial Chemicals (million liters)						
CY	2010	2011	2012	2013	2014	2015
Beginning Stocks	366	367	403	404	404	444
Production	3,449	2,681	2,770	3,265	3,050	3,059
Imports	1	36	1	0	40	40
Exports	1,344	881	555	965	700	800
Consumption	2,105	1,800	2,215	2,300	2,350	2,400
Ending Stocks	367	403	404	404	444	344
Production Capacity (Conventional Fuel)						
No. of Biorefineries	430	418	408	399	390	390
Capacity	5,100	5,012	4,902	4,807	4,729	4,517
Capacity Use (%)	67.6%	53.5%	56.5%	67.9%	64.5%	67.7%
Source: Prepared by ATO/Sao Paulo based on the "Bioethanol Production, Supply and Demand - All Uses" table. Numbers for 2011 and 2012 are projections.						

The Ethanol – Other Uses Indexes released by the University of Sao Paulo's College of Agriculture "Luiz de Queiroz" (ESALQ) follow. The Indexes track anhydrous and hydrous ethanol for "other uses" prices received by producers in the domestic spot market.

Price for Anhydrous Ethanol - Other Uses: State of São Paulo (R\$/000 liters).					
Month	2010	2011	2012	2013	2014
January	1,297.20	1,122.50	1,350.30	1,371.20	1,477.60
February	1,348.20	1,182.10	1,248.80	1,368.10	1,523.40
March	1,044.30	1,443.10	1,297.80	1,363.70	1,596.50
April	926.20	1,424.80	1,321.20	1,401.30	1,535.80
May	880.10	1,054.70	1,331.40	1,376.20	1,387.20
June	830.60	1,078.80	1,340.70	1,320.40	1,372.70
July	925.20	1,165.90	1,315.00	1,335.10	
August	983.80	1,234.00	1,277.80	1,284.50	
September	1,047.60	1,207.10	1,286.10	1,289.20	
October	1,175.40	1,259.60	1,194.10	1,340.90	
November	1,222.40	1,296.20	1,252.20	1,387.70	
December	1,221.60	1,275.30	1,334.60	1,477.80	
Source: USP/ESALQ/CEPEA. 1/ July 2014 price refers to July ?????					

Price for Hydrated Ethanol - Other Uses: State of São Paulo (R\$/000 liters).					
Month	2010	2011	2012	2013	2014
January	1,196.20	1,122.50	1,186.40	1,160.40	1,333.40
February	1,139.60	1,182.10	1,154.60	1,203.20	1,378.80
March	891.50	1,443.10	1,211.70	1,234.00	1,483.50
April	803.70	1,424.80	1,217.90	1,277.40	1,409.70
May	743.40	1,054.70	1,176.00	1,168.00	1,246.00
June	727.80	1,078.80	1,114.80	1,170.00	1,247.10
July	810.70	1,165.90	1,101.20	1,158.80	
August	856.10	1,234.00	1,078.20	1,106.90	
September	897.80	1,207.10	1,104.30	1,160.10	
October	1,000.60	1,259.60	1,060.00	1,188.10	
November	1,007.80	1,296.20	1,127.40	1,212.00	
December	1,074.50	1,275.30	1,157.70	1,311.90	
Source: USP/ESALQ/CEPEA. 1/ July 2014 price refers to July ?????					

4. Biodiesel

Biodiesel is a trans-esterified vegetable oil also known as fatty acid methyl ester produced from soy oil, cottonseed oil, rapeseed, oil, other vegetable oils, animal fats, and recycled cooking oils.

4.1. Brazilian Biodiesel Production, Supply and Demand (PS&D) Table

The table below shows the Brazil's biodiesel supply and demand (PS&D) table for calendar years (CY) 2009 through 2015.

Biodiesel (Million Liters)							
Calendar Year	2009	2010	2011	2012	2013	2014	2015
Beginning Stocks	90	135	60	132	54	32	82
Production	1,608	2,386	2,673	2,717	2,917	3,500	4,392
Imports	4	9	18	0	0	0	0
Exports	3	8	6	0	39	40	50
Consumption	1,565	2,462	2,613	2,795	2,900	3,410	4,340
Ending Stocks	135	60	132	54	32	82	84
Production Capacity							
Number of Biorefineries	63	66	65	65	64	64	65
Nameplate Capacity	4,350	5,837	6,742	7,400	7,900	8,200	8,300
Capacity Use (%)	37.0%	40.9%	39.6%	36.7%	36.9%	42.7%	52.9%
Feedstock Use (1,000 MT)							
Soybean for Crush	5,970	8,897	8,655	9,453	9,736	11,473	14,398
Cottonseed for Crush	341	506	848	720	463	370	464
Animal Fat	226,742	336,492	401,994	434,266	575,832	789,622	990,863
Market Penetration (Liters - specify unit)							
Biodiesel, on-road use	1,608	2,386	2,673	2,717	2,917	3,500	4,392
Diesel, on-road use	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Blend Rate (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Diesel, total use	44,298	49,239	52,264	55,900	58,492	60,247	62,054

4.2. Production

A. Feedstock

Biodiesel can be produced from several raw materials such as soybeans, cottonseed, animal fat, castor seed (*Ricinus communis*), African palm oil ("dendê"), "pinhao manso" (*Jatropha curcas*), sunflower, peanut, fried oil or others.

According to updated information reported by the Petroleum, Natural Gas and Biofuels National Agency (ANP), soybeans currently represents 76 percent of total biodiesel feedstock, followed by animal tallow (20 percent) and cottonseed (1 percent). The table below shows biodiesel production by raw material according to ANP and the Brazilian Association of Vegetable Oil Industry (ABIOVE).

Biodiesel Production by Raw Material (m³)						
Raw material	2009	2010	2011	2012	2013	2014
Soybean Oil	1,250,577	1,960,822	2,152,298	2,041,667	2,142,990	537,773
Animal Tallow	258,035	330,574	367,578	481,231	611,215	178,668
Cottoseed	59,631	57,458	84,711	123,247	65,960	15,866
Others	40,206	37,586	68,174	71,338	97,331	12,454
Total	1,608,448	2,386,438	2,672,760	2,717,483	2,917,495	744,762

Source: ANP/ABIOVE. 2014 data refers to Jan-Mar.

The tables below show official USDA data for soy and cotton oil production for MY 2010/11 through 2013/14, as well as a projection for MY 2014/15.

Brazilian Soybeans and Products Production (000 hectares, 000 metric tons)					
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Area harvested	24,200	25,000	27,700	29,900	30,500
Soybeans	75,300	66,500	82,000	87,500	91,000
Soybeans for crushing	38,083	35,235	37,000	37,100	37,100
Meal, Soybean	28,880	28,080	28,200	28,680	28,840
Oil, Soybean	7,150	6,950	6,980	7,100	7,130

Source: USDA/FAS

Brazilian Cotton and Products Production (000 hectares, 000 metric tons)					
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Area Harvested	1,400	1,400	900	1,100	1,200
Seed Cotton 1/	4,942	4,857	3,350	4,187	4,651
Lint Cotton	1,960	1,894	1,306	1,633	1,807
CottonSeed	2,750	2,750	2,100	2,300	2,400
Meal, Cottonseed	1,350	1,350	1,030	1,130	1,179
Oil, Cottonseed	454	455	347	380	397

Source: USDA/FAS 1/ Seed cotton calculated based on average lint yields.

B. Production Estimates

Biodiesel production remains regulated by the government. In 2015, total Brazil biodiesel production is forecast at 4.392 billion liters, a 25 percent increase compared to revised estimate for 2014 (3.5 billion liters). The projection takes into account the increase of the mandatory biodiesel blend to 6 percent as of July 1st, 2014 and 7 percent as of November 1st, 2014.

Biodiesel production in 2013 was 2.92 billion liters, as reported by ANP. Cumulative January-March 2014 production is approximately 745 million liters. Biodiesel production is reported below.

Brazilian Biodiesel Monthly Production/Deliveries (000 liters)						
Month	2009	2010	2011	2012	2013	2014
January	90,352	147,435	186,327	193,006	226,505	244,661
February	80,224	178,049	176,783	214,607	205,738	240,621
March	131,991	214,150	233,465	220,872	230,752	259,480
April	105,458	184,897	200,381	182,372	253,591	
May	103,663	202,729	220,484	213,021	245,934	
June	141,139	204,940	231,573	214,898	236,441	
July	154,557	207,434	249,897	230,340	260,671	
August	167,086	231,160	247,934	254,426	247,610	
September	160,538	219,988	233,971	252,243	252,714	
October	156,811	199,895	237,885	251,416	277,992	
November	166,192	207,868	237,189	245,321	265,176	
December	150,437	187,856	216,870	244,962	214,364	
Total	1,608,448	2,386,399	2,672,760	2,717,483	2,917,488	744,762

Source: ANP

ANP reports that as of May 2014, Brazil has 62 plants authorized to produce biodiesel. Current authorized industrial capacity is estimated at 21.8 million liters/day or approximately 7.85 billion liters/year, based on a 360 day operation cycle. This represents approximately 2.25 times the mandatory biodiesel production to be blended in mineral diesel in 2014; and a 2 percent increase compared to the authorized industrial capacity for the same period in 2013 (21.4 million liters/day).

ATO/Sao Paulo projects industrial capacity for 2014 and 2015 at 64 and 65 plants, respectively, or 8.3 billion liters per year in 2015, up 6 percent from current industrial capacity. Projections are based on information for authorized plants and requests for authorization provided by ANP and industry sources.

C. Cost of Production and Market Prices

The biodiesel market remains regulated by the government through a public auction system (see BR110013 – Brazilian Biofuels Annual Report for more information) which gives preference to producers with the Social Fuel Stamp. The Social Fuel Stamp provides incentives for poorer farmers (family farmers) in disadvantaged areas.

The tables below summarize the results of the 29th through the 36th auctions during 2013 and 2014. Additional auctions should take place in the upcoming months to guarantee supply for the remaining months of the year.

Biodiesel Auctions				
Auction	29th Auction	30th Auction	31st Auction	32nd Auction
Date	02/1-6-7/13	04/1-4-5/13	06/3-6-7/13	08/5-8-9/13
Number of Suppliers	33	38	39	35
Offered Quantity (m ³)	715,500	750,253	765,770	770,240
Purchased Quantity (m3)	517,357	488,532	515,443	524,836
Average Price (R\$/m3) 1/	2,263.56	2,031.22	1,987.95	1,896.68
Delivery Date	Mar-Apr/13	May-Jun/13	Jul-Aug/13	Sep-Oct/13
Source: ANP 1/ Price FOB, including PIS/PASEP and COFINS, excluding ICMS, including Petrobras margin.				

Biodiesel Auctions				
Auction	33rd Auction	34th Auction	35th Auction	36th Auction
Date	Oct-13	Dec-14	Feb-14	Apr-14
Number of Suppliers	40	39	36	42
Offered Quantity (m3)	739,400	588,700	699,278	735,230
Purchased Quantity (m3)	521,546	485,636	549,929	463,870
Average Price (R\$/m3) 1/	1,976.40	2,090.45	1,965.37	1,910.00
Delivery Date	Nov-Dec/13	Jan-Fev/14	Mar-Apr/14	May-Jun/14
Source: ANP 1/ Price FOB, including PIS/PASEP and COFINS, excluding ICMS, including Petrobras margin.				

Biodiesel prices received by producers are determined by the public auction system (see Average Price in the tables above). Producers are not allowed to change the sales price set at the auctions and consequently must search for low cost raw material or hedge their activities to offset risk.

Industry sources report that raw materials represent approximately 70 to 80 percent of biodiesel production cost. Given that roughly 73 percent of biodiesel production still results from the use of soybean oil, the profitability of the sector is highly dependent on oilseed prices.

The tables below show the price for soybean oil in 2013 and 2014 (January-April). The average crude price in the state of Sao Paulo is R\$2,253.88/ton for January-April 2014, a 10 percent drop compared to the same period in 2013 (R\$2,505.75/ton).

Soybean Oil, Crude - Prices (2013)						
Location	Jan	Feb	Mar	Apr	May	Jun
Chicago (US\$/ton)	1,132	1,132	1,105	1,090	1,082	1,054
Premium (US\$/ton)	-34	-33	-90	-74	-98	122
Port of Paranaguá - Fob (US\$/ton)	1,098	1,100	1,015	1,015	983	932
São Paulo - (R\$/ton com ICMS 12%)	2,748	2,595	2,415	2,265	2,220	2,270
Elaborated by ABIOVE based on several sources.						

Soybean Oil, Crude - Prices (2013)						
Location	Jul	Aug	Sep	Oct	Nov	Dec
Chicago (US\$/ton)	998	931	940	897	896	882
Premium (US\$/ton)	-123	-69	-41	14	17	-8
Port of Paranaguá - Fob (US\$/ton)	875	862	899	911	913	874
São Paulo - (R\$/ton com ICMS 12%)	2,218	2,167	2,283	2,300	2,343	2,425

Elaborated by ABIOVE based on several sources.

Soybean Oil, Crude - Prices (2014)						
Location	Jan	Feb	Mar	Apr	May	Jun
Chicago (US\$/ton)	835	876	935	937	n/a	n/a
Premium (US\$/ton)	-3	10	-36	-34	n/a	n/a
Port of Paranaguá - Fob (US\$/ton)	832	887	899	904	n/a	n/a
São Paulo - (R\$/ton com ICMS 12%)	2,232	2,275	2,333	2,176	n/a	n/a

Elaborated by ABIOVE based on several sources.

4.3. Consumption

Biodiesel domestic consumption remains regulated by GoB, thus the sector must comply with the biodiesel mandate which requires all mineral diesel to have a six percent biodiesel blend (B6) as of July 2014 and seven percent (B7) as of November 1 2014. Based on industry projections for mineral diesel domestic demand, ATO/Sao Paulo forecasts total biodiesel domestic consumption for 2014 and 2015 at 3.41 and 4.34 billion liters, respectively.

Biodiesel consumption for 2013 is estimated at 2.9 billion liters based on mineral diesel consumption of 58.49 billion liters and the mandatory mixture of five percent (B5) during 2013.

The table below shows the vehicle fuels consumption matrix from 2009-2014, according to ANP.

Brazilian Fuel Consumption Matrix (000 m3)						
	2009	2010	2011	2012	2013	2014 1/
Diesel *	44,298	49,239	52,264	55,900	58,492	23,963
Gasoline C**	25,409	29,844	35,491	39,698	41,365	18,062
Hydrated Ethanol	16,471	15,074	10,899	9,850	11,755	5,084

Source: ANP. * Diesel includes Bx Biodiesel as of 2008. ** Gasoline C includes 20-25 % of anhydrous ethanol. 1/ 2014 refers to January-February.

4.4. Trade

Export figures by country of destination for biodiesel (NCM 3826.00.00) for the years 2012, 2013 and 2014 (January-May), according to SECEX, are shown below. No import has been registered under tariff code NCM 3826.00.00.

Brazilian Biodiesel Exports by Country of Destination (kg, US\$ FOB)						
	CY 2012		CY 2013		CY 2014 1/	
Country	Quantity	Value	Quantity	Value	Quantity	Value
Singapore	45	1,101	0	0	0	0
Belgium	0	0	3,990,755	3,769,171	0	0
Spain	0	0	23,330,227	22,570,900	13,164,940	12,506,693
United States	0	0	0	0	385	18,025
Japan	0	0	0	0	44	7,067
Netherlands	0	0	7,018,564	6,435,103	0	0
Total	45	1,101	34,339,546	32,775,174	13,165,369	12,531,785

Source : Brazilian Secretariat of Foreign Trade SECEX - Note: NCM 3826.00.00 - 1/ Jan-May

4.5. Stocks

ATO/Sao Paulo forecasts biodiesel ending stocks for 2015 at 84 million liters, similar to 2014 (82 million liters), based on the difference between total supply and disappearance (consumption and exports).

5. Advanced Biofuels

Brazil has no commercial use of advanced biofuels yet. Granbio has announced recently that its plant located in Alagoas should start producing advanced ethanol from sugarcane in 2014, but full capacity production (82 million liters) should be reached only in 2015.

In July 2014, the National Bank for Social and Economic Development (BNDES) announced a total of R\$ 1.9 billion (approximately US\$ 860 million) credit line under the "Paiss Agricola" program to fund agricultural research (genetic modified plants, sugarcane seeds to replace current feedstocks used for plantin, mechanization, etc), and development for the sugar-ethanol sector, including investimets in advanced biofuels.

Updated information from the industry reports the following second generation projects in Brazil for 2014 thorough 2015:

A. Three commercial plants in operation:

- In 2014 – one plant in the state of Alagoas with projected annual production of 82 million liters);
- In 2014 – one plant in the state of Sao Paulo with projected annual production of 40 million liters);
- In 2015 – one plant in the state of Goias with projected annual production of 40 million liters);

B. Two demonstration plants:

- In 2014: one plant in the state of Sao Paulo with projected production of 3 million liters
- In 2016: one plant in the state of Mato Grosso do Sul with projected production of 3 million liters

6. Notes on Statistical Data

6.1. Ethanol

Beginning stocks for the ethanol for "All Uses" table is based on information from the Ministry of Agriculture, Livestock and Supply (MAPA) and reflect all stocks at the ethanol plants as of January 1, 2006. Beginning Stocks for the ethanol "For Fuel Only" table is estimated based on historical average use of bioethanol for fuel/other uses. On average, ethanol for fuel has represented 87 percent of the total ethanol disappearance (use), therefore Post assumed this percentage to calculate the theoretical beginning stocks for fuel in January 1, 2006. All other stock figures were calculated based on the difference between total supply and disappearance (consumption and exports).

Ethanol production estimates for "All Uses" were provided by MAPA and are consistent with previous ATO/Sao Paulo GAIN reports submitted by marketing year. Production estimates "For Fuel Only" are taken as the difference between "production for All Uses" minus estimates for "disappearance for other uses" (domestic consumption and exports) given that all Brazilian official publications and industry sources report production in hydrous/anhydrous ethanol only.

Trade figures were based on the Brazilian Secretariat of Foreign Trade (SECEX). SECEX breaks down trade numbers in four categories as described below:

- NCM 2207.10.10 - undenatured ethylic alcohol with ethanol content equal or over 80 percent. With water content equal or below 1 percent vol. Undenatured alcohol is defined as pure ethanol with no additives and suitable for consumption.
- NCM 2207.10.90 - undenatured ethylic alcohol with ethanol content equal or over 80 percent. Others. Undenatured alcohol is defined as pure ethanol with no additives and suitable for consumption.
- NCM 2207.20.11 - denatured ethylic alcohol with any ethanol content. With water content equal or below 1 percent vol. Denatured alcohol is defined as ethanol with additives which make it poisonous and/or unpalatable, thus, no suitable for human consumption. Denatured alcohol is used as a solvent and as fuel for spirit burners and camping stoves. Different additives like methanol are used to make it difficult to use distillation or other simple processes to reverse the denaturation.
- NCM 2207.20.19 - denatured ethylic alcohol with any ethanol content. Others. Denatured alcohol is defined as ethanol with additives which make it poisonous and/or unpalatable, thus, no suitable for human consumption. Denatured alcohol is used as a solvent and as fuel for spirit burners and camping stoves. Different additives like methanol are used to make it difficult to use distillation or other simple processes to reverse the denaturation.

There are no figures for ethanol exports for fuel and/or other uses. Post estimated ethanol "for fuel" based on the type of ethanol that is usually imported by the final destination, as reported by UNICA. Thus, the United States, the Caribbean countries and Sweden usually import ethanol for fuel; whereas Japan, Korea and several other importing countries, including the European Union import ethanol for industrial and other uses.

Domestic consumption figures were taken from information provided by Datagro, the Petroleum, Natural Gas and Biofuels National Agency (ANP) and UNICA.

The number of biorefineries were taken from MAPA and UNICA. Ethanol production capacity was based on production figures as reported by UNICA. Post took the highest ethanol production figure in a given 15-day period, as reported by the institution, and extrapolated to the entire Center-South crushing season. A similar procedure was performed for Northeast production based on MAPA reports.

Sugarcane crushed for ethanol production was calculated based on the actual production breakdown for sugar/ethanol as described in previous GAIN reports. Note that on average, one metric ton of sugarcane produces 80.5 liters of ethanol.

6.2. Biodiesel

Production numbers are based on figures reported by ANP and forecasts are based on projections for diesel consumption and the results from the public auctions. Biodiesel market continues to be regulated by the government through a public auction system which sets the volume of biodiesel that should be produced and delivered to fuel distributors in a particular period.

Consumption figures are based on mineral diesel consumption and the mandatory mixture of biodiesel (B2 through B7) in mineral diesel set by Brazilian legislation.

Trade figures were based on the Brazilian Secretariat of Foreign Trade (SECEX), as reported below:

- From 2006 through 2011 - NCM 3824.90.29 – Other industrial fatty acid derivatives, mixtures and preparations containing fatty alcohols or carboxylic acids or their derivatives.
- As of 2012 – NCM 3826.00.00 – biodiesel and their blends.

The number of biorefineries and production capacity are based on ANP reports. Feedstock use for biodiesel consumption is based on the following conversion rates:

- 0.875 metric ton of biodiesel = 1,000 liters of biodiesel
- 1 metric ton of biodiesel = 1.03 metric ton of soybean oil
- 1 metric ton of biodiesel = 1.00 metric ton of cottonseed oil
- Extraction rate for soybean oil = 0.1919
- Extraction rate for cottonseed oil = 0.1649
- 1 kg of animal fat = 1.064 liters of biodiesel

6.3. Exchange Rate

Exchange Rate (R\$/US\$1.00 - official rate, last day of period)							
Month	2008	2009	2010	2011	2012	2013	2014
January	1.76	2.32	1.87	1.67	1.74	1.99	2.43
February	1.68	2.38	1.81	1.66	1.71	1.98	2.33
March	1.75	2.25	1.78	1.62	1.82	2.01	2.26
April	1.69	2.18	1.77	1.57	1.89	2.00	2.24
May	1.63	1.97	1.81	1.57	2.02	2.13	2.24
June	1.64	1.95	1.80	1.57	2.02	2.22	2.20
July 1/	1.57	1.87	1.75	1.56	2.05	2.29	2.22
August	1.63	1.88	1.75	1.59	2.04	2.37	--
September	1.92	1.78	1.69	1.85	2.03	2.23	--
October	2.12	1.74	1.70	1.69	2.03	2.20	--
November	2.33	1.75	1.71	1.81	2.10	2.32	--
December	2.34	1.74	1.66	1.88	2.04	2.34	--

Source : Gazeta Mercantil and BACEN (as of October 2006)
1/ July 2014 refers to July 24